DOCUMENT RESUME

ED 420 216 HE 031 256

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TITLE The Forgotten Scholars: American Indian Doctorate Receipt, 1980-1990.
PUB DATE 1996-00-00
NOTE 14p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *American Indians; Demography; *Doctoral Degrees; *Educational Trends; Graduate Study; Higher Education; Intellectual Disciplines; *Sex Differences; Trend Analysis

ABSTRACT

This study provides a multifaceted descriptive analysis of the patterns and preferences of American Indian doctorate recipients. It is based on data from the National Research Council's Doctorate Records Project (DRP) for the period 1980-90. The study found that for the 11-year period, American Indians received 984 doctorates out of a total of 451,218 doctorates awarded. Of these 984 doctorates, 57 percent were awarded to males and 43 percent to females. Nearly half were in the field of education. Males dominated the fields of engineering and the physical sciences, while females dominated the field of education. Between 1980 and 1990, female doctorate production increased 33 percent; there was a corresponding 10 percent increase for males. The study also found that compared to the general population, American Indians were underrepresented in every field of doctoral study. It also noted that there has been much fluidity among fields of study, with increases in American Indian female doctoral production in the life sciences, social sciences, and professional fields, and increases in male doctorate production in the physical sciences, engineering, and professional fields. Overall, doctoral production in education decreased between 1980 and 1990. (Contains 11 references.) (MDM)

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THE FORGOTTEN SCHOLARS: AMERICAN INDIAN DOCTORATE RECEIPT, 1980-1990

> The literature on the Native American experience in postsecondary institutions is generally relegated to footnotes in books about other minorities in the United States. . . . In many respects, Native Americans are invisible in academe (Tierney, 1993, p.309).

Introduction

American Indians are the invisible community of color. On college and university campuses American Indians have the lowest enrollment of any group, the highest leave-taking rate, and are least likely to persist to degree attainment (U.S. Department of Education, Center for Education Statistics, 1996). Though between 1980-1990, American Indians experienced an 18% increase in enrollment and an 8% increase in aggregate degree acquisition, they still remain on the margins of institutional parity – underrepresented, underresearched, invisible (U.S. Department of Education, Center for Education Statistics, 1996). Nowhere is this invisibility – both in representation and in research – more pronounced than at the highest rung of academic excellence – the doctorate.

Research into American Indian education mirrors this institutional and scholastic invisibility: just as American Indian representation becomes more scarce the farther up the academic pipeline they travel, so too does relevant research. This scarcity of research is evident when examining the issue of American Indian doctorate attainment. Williamson (1994) contends that literature concerning American Indian doctorate

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progress and receipt is virtually nonexistent. The limited research that has addressed the relationship between American Indians and the doctorate degree consists of: a profile of the academic and career decisions of nine American Indian female doctorates (Napier, 1995); an innovative doctoral program designed for American Indian and other traditional peoples (Simonelli, 1994); a qualitative analysis of the factors that contribute to Mexican American and American Indian doctorate receipt (Williamson, 1994); and a largely quantitative description of the academic pathway to the American Indian professoriate (Cross, 1991). Though Cross cursorily examines American Indian doctorate receipt, the measure of analysis employed (raw numerical tabulations) and the breadth of this analysis (limited to a set of five one-year academic cycles) provides a quantitative examination that is both partial and inconclusive.

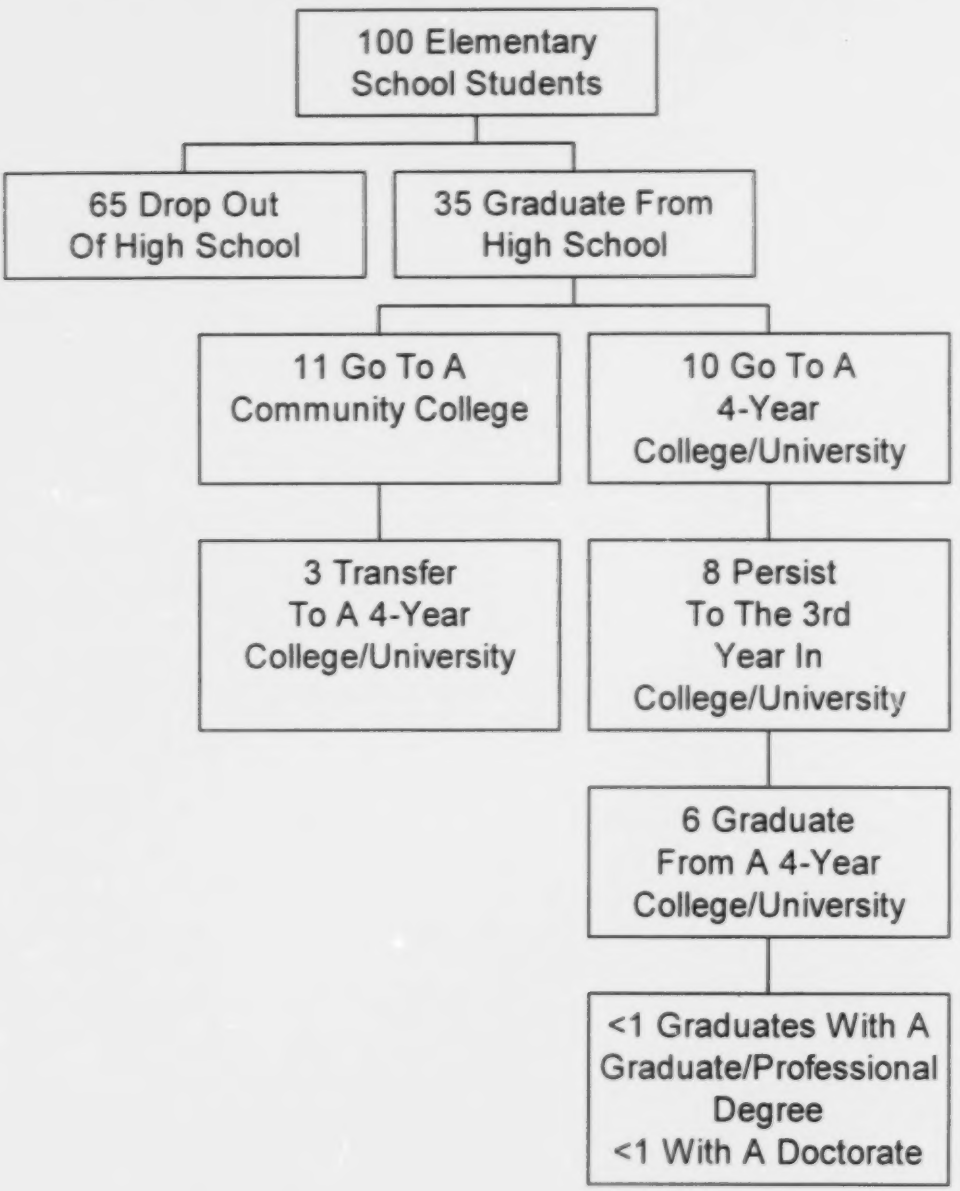
This study will expand upon the qualitative limitations evidenced in Cross' research by: a) examining American Indian doctorate receipt by gender; b) partitioning doctorate receipt into seven fields of study, thus providing a more sweeping and conclusive discipline breakdown; c) utilizing multiple units of analysis, ranging from gross numerical compilations to percent representations, which will help to situate American Indian doctorate receipt in a more broad and insightful context; and d) broadening the analytic scope of inquiry to include the eleven year period between 1980-1990. The objective here is to provide a multifaceted descriptive analysis of the patterns and preferences of American Indian doctorate recipients. The overarching goal of this research is to illuminate the invisible.

The March Towards the Doctorate

Doctorate acquisition does not occur in a vacuum; one does not simply "arrive" at the doctorate. It is dependent upon the safe navigation through a series of academic building blocks, starting with grade school and ending with graduate school. The doctorate is the highest reward that lies at the end of this academic maze. In order to contextualize American Indian doctorate acquisition, it is imperative to chronicle the academic pipeline from whence such students emerge.

Figure 1 clearly illustrates the loss of American Indian representation at each successive stage of the educational pipeline. Astin (1982) posits that this lack of representation "becomes more severe at each higher level . . . owing to several critical 'leakage' points in the educational pipeline" (p.52). Thus, as American Indian students travel the academic highway – from grade school to graduate school – in pursuit of the doctorate, their persistence and participation in each succeeding level of education is reduced. The result of this continual reduction is evidenced in the fact that for each 100 American Indian elementary students, less than one will receive the doctorate.

The American Indian Educational Pipeline


100 Elementary School Students
65 Drop Out Of High School
35 Graduate From High School
11 Go To A Community College
10 Go To A 4-Year College/University
3 Transfer To A 4-Year College/University
8 Persist To The 3rd Year In College/University
6 Graduate From A 4-Year College/University
<1 Graduates With A Graduate/Professional Degree
<1 With A Doctorate

Source. Adapted from the Unites States Bureau of the Census (1993). 1990 Census of Population: Social and Economic characteristics, United States Summary (1990 CP-2-1). U.S. Government Printing Office, Washington, DC., Table 106, p. 107.

American Indian Doctorate Acquisition

The journey through the academic pipeline is a conflicting study of persistence and attrition. A multitude of obstacles confront American Indian students as they navigate their way through higher education (Davis, 1992; Falk and Aitken, 1984; Patton and Edington, 1973; Ross, 1979; Williamson, 1994). In spite of such barriers, a select few American Indians do persist through the pipeline and receive the doctorate. Though this cohort is comparatively small when transposed against the doctorate acquisition of other ethnic groups, an analysis of American Indian doctorate receipt reveals much about an overlooked and underresearched slice of American Indian education.

Methods

To provide an overview of American Indian doctorate receipt between 1980-1990, the National Research Council's Doctorate Records Project (DRP) was utilized. The DRP derives information form the Survey of Earned doctorates from U.S. Universities. This yearly survey is filled out by doctorate recipients from U.S. universities. The data are collected in the seven broad fields of physical science, engineering, life science, social science, humanities, education and professional.

Raw numbers provide a partial presentation of American Indian doctorate recipients. These numbers must be compared to some baseline figures. Therefore, to create an equity benchmark which would facilitate the comparison of doctorate production data, we utilized the Doctoral Parity Index. The Doctoral Parity Index is derived from taking the cumulative percentage of American Indian doctorates from 1980-1990 and dividing it by the percentage of the American Indian population during the same period. Any number

above 1.00 is overrepresentation and numbers below 1.00 reflect underrepresentation. For this analysis, equity is reached with the percentage of American Indian doctorates produced during the period between 1980-1990 is equal to their overall population.

Results

Table 1 represents an extensive and multifaceted overview of American Indian doctorate recipients between 1980-1990. From this several points can be drawn concerning the relationship between American Indians and doctorate receipt.

Table 1

Number and Various Percentages of American Indian Doctorate Recipients by Broadfield: Cumulative From 1980-1990.

	#1	%2	%3	%4	% Ch 5	Parity 6
			Female			
Physical Science	14	0.2	3.3	16.7	0	0.29
Engineering	3	0.2	0.7	7.0	0	0.29
Life Science	61	0.3	14.4	41.2	+ 46	0.43
Social Science	84	0.4	19.9	46.7	+ 93	0.57
Humanities	38	0.2	9.0	47.5	0	0.29
Education	201	0.6	47.5	51.1	- 9	0.86
Professional	22	0.4	5.2	39.3	+ 325	0.57
All fields	423	0.4	100.0	43.0	+ 33	0.57
			Male			
Physical Science	70	0.2	12.5	83.3	+ 44	0.29
Engineering	40	0.2	7.1	93.0	+ 108	0.29
Life Science	87	0.3	15.5	58.8	+ 5	0.43
Social Science	96	0.3	17.1	53.3	- 3	0.43
Humanities	42	0.3	7.5	52.5	+ 16	0.29
Education	192	0.2	34.2	48.9	- 14	0.86
Professional	34	0.6	6.1	60.7	+ 83	0.43
All fields	561	0.3	100.0	57.0	+ 10	0.43

Note. (1) Number of American Indian doctorates in that field
(2) Percent of American Indian doctorate recipients in that field as total of all recipients.
(3) Percent of American Indian doctorates in that field as a cohort.
(4) Percent of American Indian doctorates in that field by gender.
(5) Percent change from 1981-85 to 1986-1990.
(6) The parity index is the percent of American Indian Ph.D.'s for the period from 1980 to 1990 divided by their average percentage of the population (0.7%) from 1980 to 1990. A parity number of 1.00 means that American Indians are represented in doctorate production in the same proportion to their percentage of the population. Any number above 1.00 reflects overrepresentation and numbers below 1.00 reflect underrepresentation
U.S. citizens and non-U.S. citizens with permanent visas.
Source: Unpublished tabulations from the National Research Council.

Referring to Column 1, in the 11-year period between 1980-1990 United States universities produced 278,905 doctorates. There were 106,592 females doctorates and of this cohort, 423 American Indian. There were 172,313 male doctorates produced during this time period, 561 were American Indian. The field of education attracted the greatest number of both American Indian female and male doctorates, accounting for 201 and 192 of all doctorates awarded respectively. The field of engineering garnered only three female doctorates, with only 34 doctorates in the professional field being awarded to males.

Column 2 represents the overall percent of American Indian doctorate receipt as a total of all doctorates produced in the United States between 1980-1990. The 423 doctorates awarded to females accounted for 0.4% and the 561 doctorates awarded to males totaled 0.3% of national doctorate production. For both females and males, doctorate receipt in the field of education accounted for the greatest percent representation, garnering 0.6% of all doctorates awarded respectively. Female and male representation was least evidenced in the physical science, engineering and humanities fields.

The figures in Column 3 reflect the percent breakdown of American Indian doctorate receipt by particular field of study. Education is clearly the field of choice for females as 47.5% of all doctorates awarded were in this field. Conversely, only 0.7% of all female doctorates were in the field of engineering. For males, the greatest percent reflection was also in the field of education which accounted for 34.2% of all doctorates granted. The professional field accounted for only 6.1% of male doctorates.

Column 4 illustrates the comparative gender representation by field of study. Significant gender disparity is evidenced in the engineering and physical science fields as males dominate doctorate receipt in both disciplines. In fact, it is only in the field of education that female representation eclipses that of their male counterparts. When viewed as a composite, of all doctorates awarded to American Indians between 1980-1990, 57% were awarded to males, 43% to females.

Column 5 shows the percent changes from 1980-1985 and 1986-1990 in doctorate receipt by particular field of study. For females, the greatest change was in the professional field where doctorate receipt increased 325%. Increases were also noted in the life science and social science fields. No percent change occurred in the physical science, engineering and humanities fields. The only decrease in female doctorate receipt was in the field of education. For males, percent increases were witnessed in the physical science, life science, humanities and professional fields with the greatest increase occurring in the field of engineering. Conversely, decreases in male doctorate receipt were noted in both the social science and education fields. Between 1980-1990, female doctorate production increased 33%, with a 10% increase noted for males.

Lastly, Column 6 presents the representation or parity index for American Indian doctorate receipt by field. In this case, the parity index is a reflection of American Indian representation in doctorate production and is calculated by dividing the number of American Indian doctorates by their average percentage (0.7) of the population. From this, a parity number is derived. A parity number of 1.00 means that American Indians are represented in doctorate production in the same proportion to their percentage of the

population. A parity number above 1.00 represents overrepresentation with numbers below 1.00 equating to an underrepresentation.

Column 6 shows that, in every field of study, American Indians are underrepresented in doctorate production. For both females and males, parity is most closely achieved in the field of education. Severe underrepresentation for both genders is noted in the physical science, engineering and humanities fields. When partitioned by gender, female doctorates achieved greater representation than American Indian males, yet for both, parity is distant.

Discussion

This research is the first of its kind to examine American Indian doctorate production in the fields of physical science, engineering, life science, social science, humanities, education and professional. The objective was to shed light on a segment of American Indian education that had heretofore been neglected. With such research now in hand, this descriptive analysis can serve as a baseline from which to measure the future progress of doctorate production.

What is most revealing about American Indian doctorate receipt between 1980-1990 is the severity and consistency of underrepresentation. In each of the seven broad discipline fields, both females and males are underrepresented. In fact, in fields such as physical science, engineering and humanities, it would take in excess of a 3-fold increase for parity to be reached. Yet in spite of such a daunting challenge, doctorate receipt for both women and men increased.

When examining doctorate receipt by individual broadfield, causes for both concern and celebration are warranted. With low cohort and national representation, and stagnation noted in several disciplines, physical science, engineering and humanities appear to be the fields of greatest concern for both females and males. Conversely, tremendous increases in female doctorate production were noted in life science, social science and particularly in the professional field. Healthy increases in male doctorate production in the physical science, engineering and professional fields were noted as well.

What is most striking and, in turn, most revealing, is the field of education. This discipline dominates doctorate receipt for both females and males. It is also the field of study in which parity is most closely achieved. Yet, for both women and men, doctorate receipt in education actually decreased. Though education was clearly the most popular field of study during this period, its production decrease indicates a subtle shift away from education and into other fields of study, as noted by the increases in competing fields. Such fluctuations indicate a diversified and, at times, a rather fluid American Indian doctorate production. With the call for more American Indian faculty and administration in institutions of higher education (Williamson, 1994), we would argue that this diversification is the most promising and potentially important finding to emerge from this study.

This fluid nature of American Indian doctorate production is important for those colleges and universities attempting to facilitate a greater presence of Students of Color. Concerted and aggressive recruitment of such students into graduate programs is seen as a key to enhancing doctorate production. Programs such as social science and professional for women and physical science and engineering for men must capitalize on the surging

interest American Indian doctorates have shown in these fields. Institutional and economic support are also imperative to the sustained growth in American Indian doctorate receipt. It is through such proactive means as these and others that the production and diversity of American Indian doctorates will continue. A road map, a pipeline of sorts which chronicles the patterns and preferences of American Indian doctorate receipt has been presented. It is incumbent upon colleges and universities to facilitate and sustain the travel.

Conclusion

In presenting a descriptive analysis of American Indian doctorate receipt we have attempted to illuminate an aspect of American Indian education that had heretofore been neglected. From this analysis, two conclusions can be reached. First, American Indians are clearly underrepresented in doctorate receipt in all the seven broad discipline fields chronicled. Second, there is much "movement" within American Indian doctorate receipt as evidenced in the percent changes of each field. To remedy this underrepresentation and to encourage and facilitate this diversity, colleges and universities must actively recruit and retain American Indian graduate students in all fields of study. One can only speculate what each of the seven broad fields would be like today if such policies were in place in years past. What has each field lost due to the absence of American Indian scholars? These questions will only be answered through a concerted commitment to dismantling barriers, challenging policies of exclusion and creating an environment which fosters the continued growth of American Indian doctorates.

References

Astin, A. (1982). Minorities in higher education. San Francisco: Jossey Bass.

Cross, W. T. (1991). Pathway to the professoriate; The American Indian faculty pipeline. Journal of American Indian Education, 30, 13-24.

Davis, J. (1992). Factors contributing to post-secondary achievement of American Indians. Tribal College, 4, 24-30.

Falk, D., & Aitken, L. (1984). Promoting retention among American Indian college students. Journal of American Indian Education, 23, 24-31.

Napier, L. (1995). Educational profiles of nine gifted American Indian women and their own stories about wanting to lead. Roeper Review, 18, 38-44.

Patton, W., & Edington, E. (1973). Factors related to the persistence of Indian students at the college level. Journal of American Indian Education, 12, 19-23.

Ross, K. (1979). Cultural factors in the success and failure of American Indian students in higher education: A case study for the Yakima nation. Doctoral Dissertation, Claremont Graduate School.

Simonelli, R. (1994). Traditional knowledge leads to a Ph.D.: Doctoral program designed around native heritage. Winds of Change, 9, 44-47.

Tierney, W. (1993). The college experience of Native Americans: A critical analysis. In Weis, L., & Fine, M. (Eds.). Beyond silenced voices: Class, race, and gender in United States schools. Albany, New York: State University of New York Press.

United States Bureau of the Census. (1993). 1990 census of population: General population characteristics, United States summary. (1990 CP -2 -1). Washington, DC: U.S. Government Printing Office.

Williamson, M. J. (1994). Strengthening the seamless web: Fostering minority doctoral success with Mexican American and American Indian students in their doctoral programs. Paper prepared for presentation at the "Advancing Diversity: Mentoring Minority Students at the Postsecondary Level" Symposium during the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 4-8, 1994. (ERIC Document Reproduction Service No. 374 948).